

LISTING OF THE CLAIMS

This listing of claims will replace all prior versions and listing of claims in the application:

Listing of Claims:

1-14. (cancelled)

15. (original) A patient support apparatus comprising:

a base frame;

an elevating frame configured to move along a path of travel above said base frame;

a patient support surface supported by said elevating frame;

a detector supported by one of said elevating frame and said base frame, said receiver configured to detect an obstacle within said path of travel of said elevating frame and provide a control signal in response thereto; and

a control unit in communication with said detector and configured to prevent lowering of the elevating frame in response to said control signal.

16. (original) The patient support apparatus of claim 15, further comprising an emitter supported by one of said base frame and said elevating frame, said emitter configured to generate a wireless signal.

17. (withdrawn) The patient support apparatus of claim 16, wherein said emitter is supported by said base frame and said detector is supported for movement with said elevating frame.

18. (withdrawn) The patient support apparatus of claim 15, wherein said detector comprises a camera configured to capture images of said elevating frame along said path of travel.

19. (withdrawn) The patient support apparatus of claim 18, wherein said control unit is configured to compare the images captured by said camera to predefined images to determine the presence of an obstacle within said path of travel.

20. (withdrawn) The patient support apparatus of claim 15, wherein said detector comprises a force sensing tape switch including elongated upper and lower contacts, said force sensing tape switch being coupled to the base frame.

21. (original) The patient support apparatus of claim 15, wherein said emitter comprises an infrared light source.

22. (original) A patient support apparatus comprising
a base frame;
an elevating frame disposed in spaced relation to said base frame; a patient support surface supported by said elevating frame; an emitter coupled to one of said base frame and said elevating frame, said emitter being configured to generate a wireless signal; and
a receiver coupled to one of said base frame and said elevating frame, said receiver associated with said emitter and configured to detect said wireless signal.

23. (currently amended) The patient support apparatus of claim 22, further comprising a lifting device configured to move said elevating frame vertically relative to said base frame; frame.

24. (original) The patient support apparatus of claim 23, further comprising a control unit in communication with said lifting device and said receiver, said control unit configured to prevent operation of said lifting device if said receiver fails to detect said wireless signal.

25. (withdrawn) The patient support apparatus of claim 22, wherein said emitter generates an optical curtain positioned intermediate said base frame and said elevating frame.

26. (original) The patient support apparatus of claim 21, wherein said emitter comprises an infrared light source.

27. (withdrawn) The patient support apparatus of claim 26, further comprising a lens positioned proximate said infrared light source and configured to convert light emitted from said infrared light source to an optical curtain.

28. (withdrawn) The patient support apparatus of claim 27, wherein said lens comprises a fresnel lens.

29. (withdrawn) The patient support apparatus of claim 22, wherein said wireless signal includes a modulated signal and said control unit compares said modulated signal to a predefined verification signal to prevent interference from external light sources.

30. (withdrawn) The patient support apparatus of claim 22, wherein said receiver is configured to move with said elevating frame within a predefined vertical range.

31. (withdrawn) The patient support apparatus of claim 30, wherein said predefined vertical range is from said base frame to said elevating frame when said elevating frame is in a fully raised position.

32. (original) The patient support apparatus of claim 22, further comprising an indicator in communication with the control unit, said indicator configured to indicate failure of said receiver to detect said wireless signal.

33. (original) The patient support apparatus of claim 22, wherein said wireless signal includes a pulsed portion having a predefined frequency, and said receiver is configured to detect said predefined frequency.

34. (original) The patient support apparatus of claim 33, wherein said predefined frequency is approximately 57 MHz.

35. (original) The patient support apparatus of claim 34, wherein said pulsed portion has a duration of approximately 600 microseconds followed by a delay of approximately 2 milliseconds.

36. (original) The patient support apparatus of claim 22, wherein: the emitter is configured to generate a plurality of wireless signals in a plurality of signal paths; and a plurality of receivers are configured to detect said wireless signals along different ones of said signal paths, said control unit preventing movement of said elevating frame when any of said plurality of receivers fail to detect a wireless signal.

37. (withdrawn) The patient support apparatus of claim 36, wherein at least one of said receivers is supported for movement with said elevating frame.

38. (withdrawn) The patient support apparatus of claim 37, wherein said emitter is supported by said base frame.

39-60. (cancelled)

61. (original) A method of preventing movement of a component of a patient support surface upon detection of an obstacle within a path of travel of the component, said method comprising the steps of:

- providing a patient support apparatus including a movable component;
- generating a detectable wireless signal within a path of travel of said component;
- providing a receiver for detecting said wireless signal;

moving said patient support surface; generating a stop signal if said receiver fails to detect said wireless signal; and

preventing movement of said patient support surface in response to said stop signal.

62. (original) The method of claim 61, wherein said step of generating a detectable wireless signal comprises the steps of providing a light source and emitting infrared light from said light source.

63. (withdrawn) The method of claim 62, further comprising the step of placing a lens proximate said light source for converting light emitted from said light source to said wireless curtain.

64. (withdrawn) The method of claim 62, wherein said wireless signal includes a modulated signal and said receiver compares said modulated signal to a predefined verification signal to prevent interference from external light sources.

65. (withdrawn) The method of claim 61, wherein said receiver is configured to move with said elevating frame within a predefined vertical range.

66. (withdrawn) The method of claim 61, further comprising the step of activating an indicator in response to said stop signal.

67. (original) The method of claim 61, wherein said movable component includes an articulating deck movable relative to an elevating frame, and the moving step includes moving said articulating deck relative to said elevating frame.

68-73. (cancelled)

74. (original) A hospital bed comprising:

a first component;

a second component configured to move relative to said first component along a path of travel;

a detector supported by one of said first component and said second component, said detector configured to detect an obstacle within said path of travel of said second component and provide a control signal in response thereto; and

a control unit in communication with said detector and configured to prevent relative movement of said first and second components in response to said control signal.

75. (original) The hospital bed of claim 74, further comprising an emitter supported by one of said first component and said second component, said emitter configured to generate a wireless signal.

76. (withdrawn) The hospital bed of claim 75, wherein said emitter is supported by said first component and said detector is supported for movement with said second component.

77. (original) The hospital bed of claim 75, wherein said emitter comprises an infrared light source.

78. (original) The hospital bed of claim 77, wherein said wireless signal includes a pulsed portion having a predefined frequency, and said receiver is configured to detect said predefined frequency.

79. (original) The hospital bed of claim 78, wherein said pulsed portion has a frequency of approximately 57 MHz and a duration of approximately 600 microseconds.

80. (withdrawn) The hospital bed of claim 74, wherein said detector comprises a force sensing tape switch including elongated upper and lower contacts.

81. (withdrawn) The hospital bed of claim 74, wherein said detector comprises a camera configured to capture images of said second component along said path of travel.

82. (withdrawn) The hospital bed of claim 81, wherein said control unit is configured to compare the images captured by said camera to predefined images to determine the presence of an obstacle within said path of travel.

83. (original) A patient support apparatus comprising:

a first component;

a second component configured to move relative to said first component along a path of travel;

an emitter supported by one of the first component and the second component, said emitter being configured to transmit a wireless signal having a pulsed portion of a predetermined frequency and duration; and

a detector configured to detect said wireless signal, said detector being configured to provide an indication if it fails to detect said pulsed portion of said wireless signal.

84. (original) The patient support apparatus of claim 83, further comprising a control unit configured to prevent movement of said second component relative to said first component when said detector fails to detect said pulsed portion of said wireless signal.

85. (original) The patient support apparatus of claim 83, wherein said wireless signal comprises electromagnetic radiation.

86. (original) The patient support apparatus of claim 85, wherein said wireless signal comprises infrared light.

87. (withdrawn) The patient support apparatus of claim 83, wherein said pulsed portion of said wireless signal has a frequency of approximately 57 MHz.

88. (withdrawn) The patient support apparatus of claim 87, wherein said pulsed portion of said wireless signal has a duration of approximately 600 microseconds.

89. (original) The patient support apparatus of claim 83, wherein said first component is one of a base frame and an elevating frame supported by said base frame, and said second portion is the other of said base frame and said elevating frame.

90-94. (cancelled)